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PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Improvements in Electro-magnetic Relays.

I, ARCHIBALD MONTGOMERY LOW, Captain in His Majesty's Army, of Royal Flying Corps Experimental Works, Feltham, Middlesex, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to electromagnetic relays of the kind in which a number of electromagnets are so arranged as to attract a rotatable armature which carries with it an arm or the like adapted to make a contact to close a circuit.

The invention consists in an electromagnetic relay of the kind referred to in which the armature consists of a spindle upon which is secured a block into which pass a number of sets of iron wires or rods extending radially to positions near the cores of the electromagnets.

The invention also consists in an electromagnetic relay of the kind referred to in which the armature spindle is mounted in jewelled bearings carried by a detachable cage.

The invention also consists in the form of apparatus hereinafter described and illustrated in the accompanying drawing in which

Figure 1 is an elevation of the relay;

Figure 2 is a plan, while

Figs. 3, & 4 are an elevation and plan respectively of the armature.

The relay constructed according to this invention consists of four electro-magnets 1, 2, 3, 4, the cores 5 of which, preferably consisting of bundles of iron wires, pass into cages 6 secured to the plate 7. Also secured to this plate is a cage 8 preferably of rectangular section and within which the armature is pivoted. The armature comprises a spindle 9 (Figs. 3 & 4) the ends 9*a* of which are adapted to pass into jewelled bearings 20 (Fig. 2) in the upper and lower plates of the cage 8. This spindle has secured to it a block 10, the four arms 11 of the armature being seated in the face of this block and extending to positions in proximity to the cores 5. Each of these arms consists of a number of iron wires or rods as clearly shown in Figs. 1 & 3. Also secured to the armature spindle 9 is the arm 12 having at one extremity the contact-making point 13. This arm is symmetrical about the axis of the spindle 9 and is provided, at the end opposite to the point 13, with a rivet or the like 14 which can be adjusted until the arm 12 is exactly balanced.

Also secured to the spindle 9 is a collar 15 to which is attached one end of a hair spring (not shown) the other end of which is attached to a pin fixed in the adjusting disc 16. This disc is held between the upper plate 17 of the cage 8, and the faces of members 18, (Fig. 1) and is clamped by tightening the screws 19. When these screws are loosened the disc 16 can be rotated to adjust the resistance of the armature to the attraction of the magnets.

It will be seen that the cage 8 together with the armature can readily be removed from the instrument; further the armature can be adjusted so as to be in exact balance in any position of the relay.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An electromagnetic relay of the kind referred to in which the armature consists of a spindle upon which is a block into which pass a number of sets of iron wires or rods, substantially as described.

2. An electromagnetic relay of the kind referred to in which the armature spindle

[*Price* 1/-]

is mounted in jewelled bearings carried by a detachable cage, substantially as described.

3. An electromagnetic relay as claimed in Claims 1 or 2 in which the armature is provided with a hair spring or the like adapted to be turned by means of an adjusting disc to regulate the restoring force acting upon the armature, substantially as described.

4. An electromagnetic relay constructed and arranged substantially in the manner hereinbefore described and as illustrated by the accompanying drawings.

Dated this 31st day of May, 1917.

MARKS & CLERK.

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[This Drawing is a reproduction of the Original on a reduced scale.]

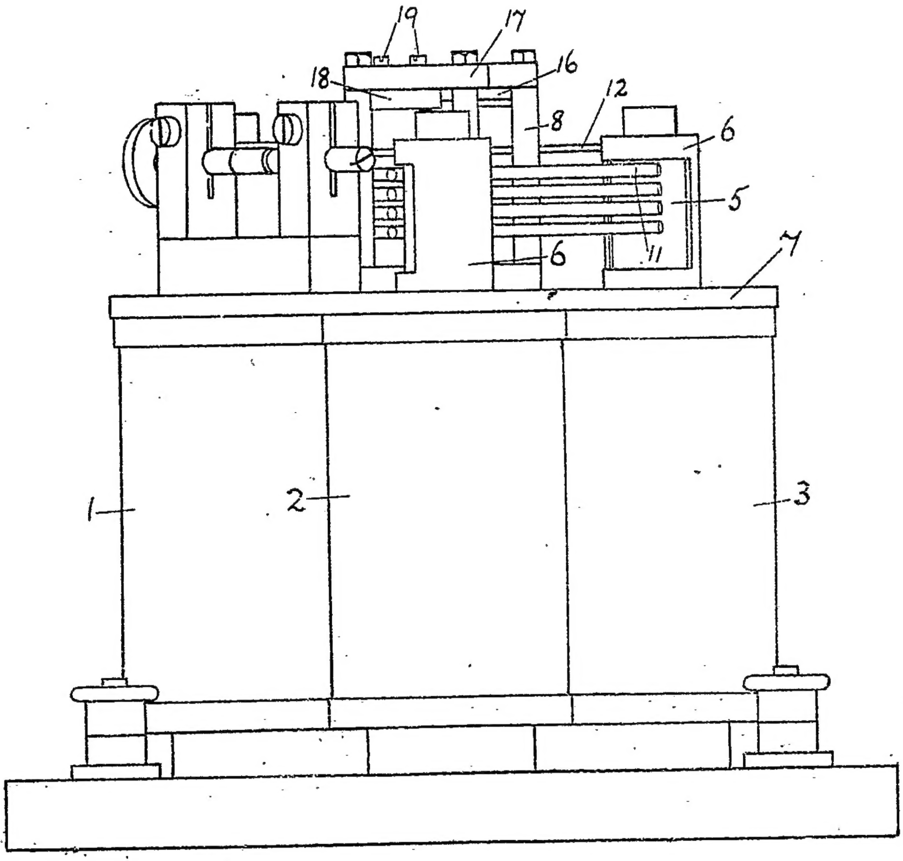
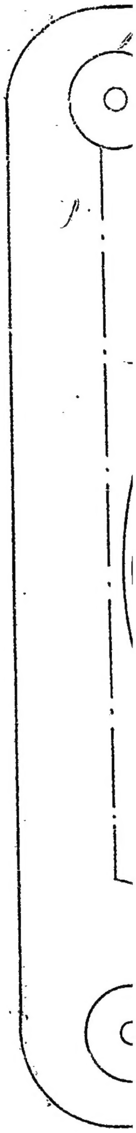


FIG. 1



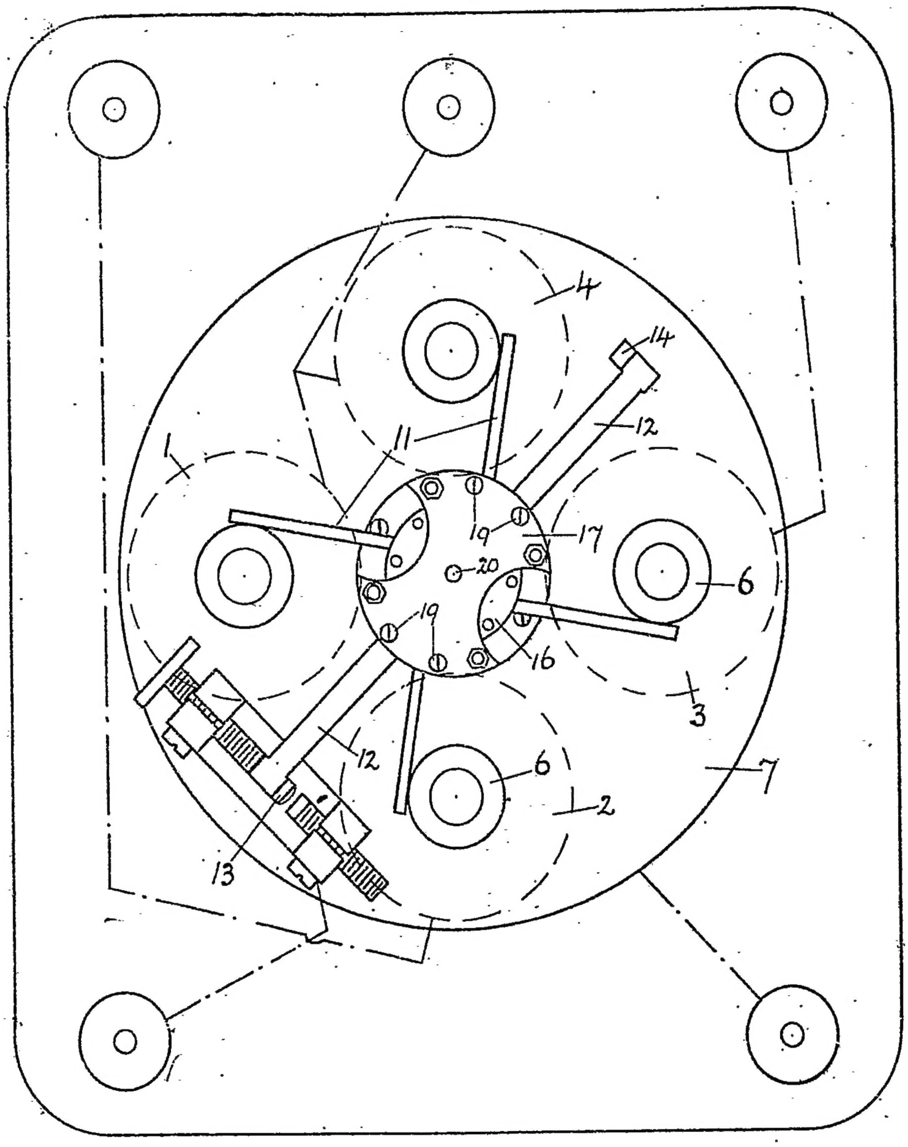


FIG. 2

Malby&Sons, Photo-Litho.

[This Drawing is a reproduction of the Original on a reduced scale.]

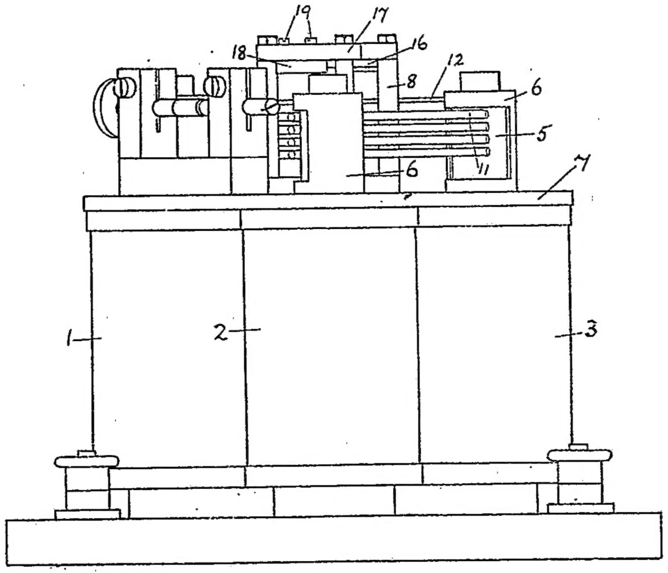


FIG. 1

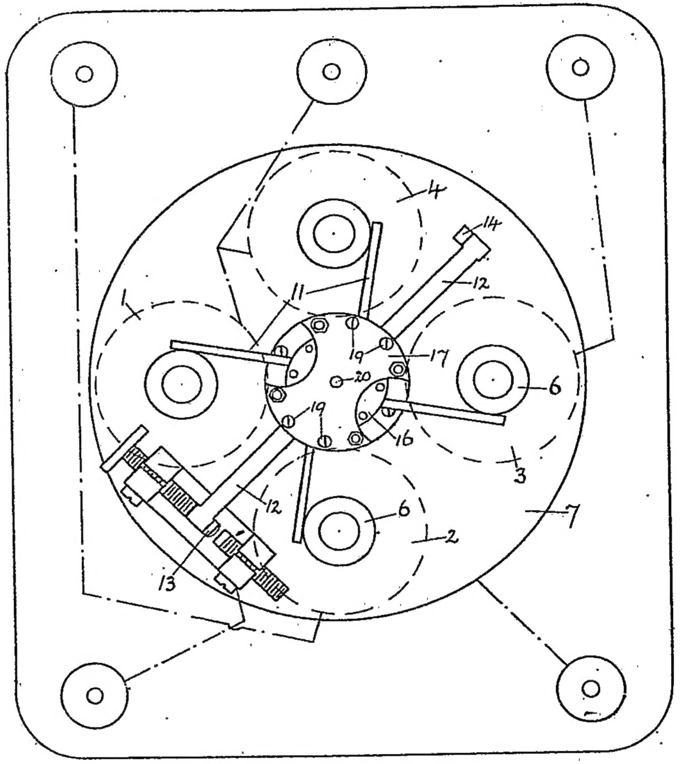


FIG. 2

Malby & Sons, Photo-Litho.

[This Drawing is a full-size reproduction of the Original.]

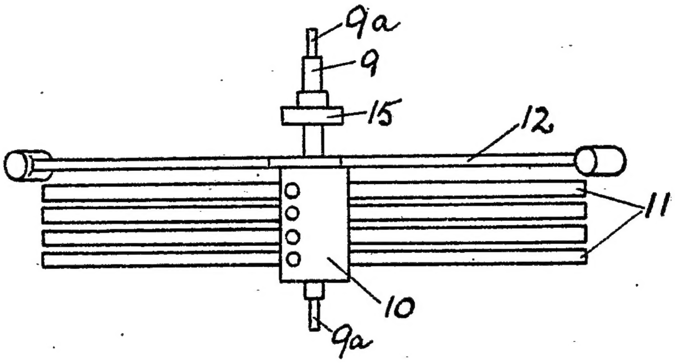


FIG. 3

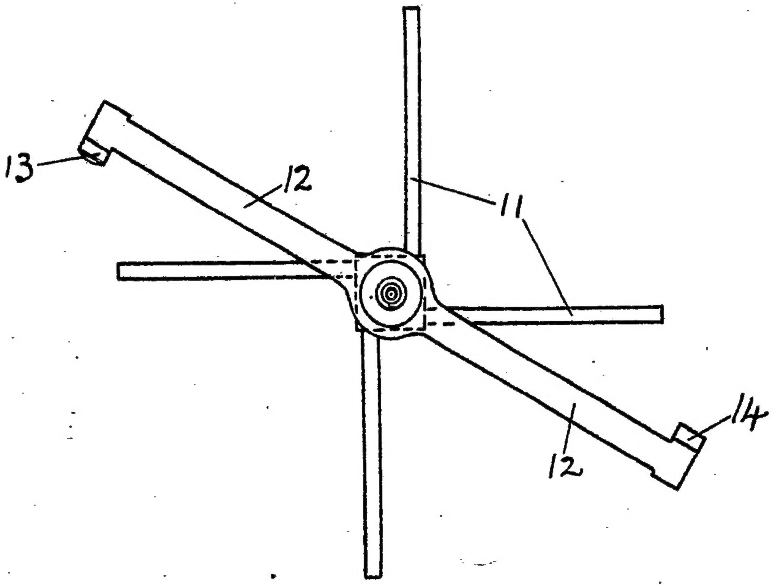


FIG. 4

Malby&Sons.Photo-Litho